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Serial No. 09/667,408

Multifunction Data Port

Reply to Office Action of 6/25/2007

CLAIMS

Claims: 1 - 29 are cancelled, Claims 30, 33, 36- 40, 42, 45, 52, 57- 59 are amended, and claims 34, 35, 38 and claims 43 - 58 are temporarily withdrawn.

I claim:

30. (Currently amended) A multifunction data port apparatus with multiple interfaces connected between a digital services network, including the Internet and an intranet, and a utility user's household, said data port comprising:

a) a utility meter interface configured to continuously measure Voltage and current in real time and to communicate said real time measurements data to a computer disposed in said data port and to receive signals from an electric utility meter indicating power consumption and transmit said signals to said computer ; harmonics and to communicate with a meter and a meter user for measuring the utility usage in said household of a utility delivered to said household and

b) a network interface configured to communicate at broadband rates with said digital service network and

c) a household interface configured to communicate with household devices of said utility user at broadband rates and

d) said computer disposed within said data port configured to store and process and communicate said data to and ~~with other communications devices~~ from said interfaces at said broadband rates;

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e) said data processing includes calculation of said harmonics and said power consumption in said real time, with peak power, average power and comparison of said calculated average power with the said average power measured by said utility meter.

31. (Previously submitted) A multifunction data port apparatus as recited in claim 30 comprising the means wherein

a) said network interface is adapted to process data exchanged at broadband rates with the Internet and digital communication networks and

b) said computer is programmed to process said data at broad band rates and function as an Internet router.

32. (Previously submitted) A multifunction data port apparatus as cited in claim 30, wherein said computer comprises a router that is adapted to communicate with a multiplicity of said digital service networks and with said interfaces located within said utility user's household and to store and process, transmit and receive said communications.

33. (Currently amended) A multifunction data port apparatus as cited in claim 30, further comprising a scrambler device to scramble and descramble said communications and said data transmitted between ~~said digital service providers in~~ said digital services network and said utility user's household.

34. (Withdrawn previously submitted) A multifunction data port apparatus as cited in claim 30, comprising a video processor configured to process, store and retrieve, and transmit and receive video data and signals, including modulating and demodulating said video signals

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and configured to convert analog video signals into digital video signals and digital video signals into analog video signals.

35. (Withdrawn previously submitted) A multifunction data port apparatus as cited in claim 30, comprising a voice processor configured to process, store and retrieve, and transmit and receive voice data and telephone communication; said voice processor providing means for transmitting and receiving voice, fax and data information from within said utility user's household and means for transmitting and receiving voice, fax and data information from external service providers and means for using transmission media selected from the group consisting of cellular and wireless transmission, telephone lines, power lines, fiber optic lines and coaxial video cable; and means for transmitting and receiving voice, fax and data information using voice over Internet protocol.

36) (Currently amended) A multifunction data port apparatus as ~~cited in claim 30,~~ wherein ~~said connection to said~~ connected between a digital services network and to said digital service providers in said including the Internet and a utility user in said utility user's household, office or other structure, said data port comprising: ~~or an intranet is by means of at least one transmission media selected from the group consisting of fiber optic cable, coaxial cable, twisted pair cable, electric power lines, telephone lines and wireless transmission media.~~

a) a utility meter interface configured to continuously measure Voltage and current in real time and to communicate said real time measurements data to a computer disposed in said data port and to receive signals representing said data from an electric utility meter indicating power consumption and transmit said signals to said computer ;

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b) a network interface configured to communicate at broadband rates with said digital service network ;

c) an interface configured to communicate with said utility user and with said household and other devices of said utility user at broadband rates ;

d) said computer configured to store and process and communicate said data to and from said interfaces at said broadband rates;

e) said data processing includes calculation of said harmonics and said power consumption in said real time, with peak power, average power and comparison of said calculated average power with the said average power measured by said utility meter; and

f) said connection to said digital services network and to said digital service providers in said Internet is by means of at least one transmission media selected from the group consisting of fiber optic cable, coaxial cable, twisted pair cable, electric power lines, telephone lines and wireless transmission media.

37) (Currently amended) A multifunction data port apparatus as cited in claim 30, wherein said computer further comprises a data storage device powered by the electric utility configured to store information and communication received from said interfaces and a battery to provide backup power in cases of power outage, with multiple interfaces connected between a digital services network, including the Internet, and a utility user or said utility user and said utility company and its infrastructure, said data port comprising

a) a utility meter interface configured to continuously measure Voltage and current in real time and to communicate said real time measurements data to a computer disposed in

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said data port and to receive signals representing said data from an electric utility meter indicating power consumption and transmit said signals to said computer ;

b) a network interface configured to communicate at broadband rates with said digital service network and

c) an interface configured to communicate with said utility user and with said household and other devices of said utility user at said broadband rates and

d) said computer configured to store and process and communicate said data to and from said interfaces at said broadband rates;

e) said data processing includes calculation of said harmonics and said power consumption in said real time, with peak power, average power and comparison of said calculated average power with the said average power measured by said utility meter;

f) said connection to said digital services network and to said digital service providers in said Internet is by means of at least one transmission media selected from the group consisting of fiber optic cable, coaxial cable, twisted pair cable, electric power lines, telephone lines and wireless transmission media; and

g) wherein said computer further comprises a data storage device powered by the electric utility configured to store information and communication received from said interfaces and a battery to provide backup power in cases of power outage

38) (Withdrawn currently amended) A multifunction data port apparatus as cited in claims 30, 36 and 37 wherein said computer is programmed to detect a power outage and to retrieve stored digitized voice messages in said digital services network from said data storage

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device and to communicate said retrieved message to said utility user when said computer detects a power outage.

39) (Currently amended) A multifunction data port apparatus as cited in claims 30, 36 and 37 further comprising global positioning or other means to identify the location of said multifunction dataport and wherein said computer is programmed to detect a power outage and to communicate with said utility company the geophysical location of said power outage through said digital services network.

40) (Currently amended) A method to use said data port and thermostat adjustments in said utility user's household to shed peak power loads of said utility comprising the following steps:

a) said electric utility offers reduced power rates to utility customers which allows said utility company to change said thermostat adjustments at times of peak power demand and

b) installing said data port and said thermostat which is adjusted both remotely and manually in said households of said utility users who authorize said utility to adjust their said thermostats and

c) said utility modifies said thermostat adjustments in times of said peak power demand by amounts agreed by said utility customer and said utility and said customer receives power usage data from said data port and

d) said utility compares said power usage before and after said thermostat adjustment, while permitting said customers to reset their said thermostats at any time and

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e) said utility uses said difference in said power usage to measure effectiveness of said method and

f) said utility communicates via said data port to said utility user the environmental and financial benefits of said method to reduce said power usage with said thermostat adjustment. .
~~using the multifunction data port apparatus as cited in claim 30, wherein said computer is programmed to modify the thermostat settings in the utility user's household as a function of changes in the cost or availability of electric power in response to communications with the said data port from the electric utility or the utility user.~~

41) (Previously submitted) A multifunction data port apparatus as cited in claim 30 further comprising a sealed housing with attendant electronics being configured to detect any tampering of the seal for said sealed housing and means to detect any physical intrusion within said data port apparatus or said sealed housing and means to program said computer comprised in said data port to transmit said evidence of said tampering to said utility provider.

42) (Currently amended) A method to use said multifunction data port apparatus with multiple interfaces connected between said digital services network, including the Internet and said intranet, and a utility user's household for power management and communication, said data port and said method comprising the steps of:

- a) installing a data port at utility user's premises ;
- b) using said data port to continuously measure Voltage and current in real time;
- c) calculating and storing said data on said harmonics, transients, peak and average power and compare said calculated power with said power measurements from said utility meter ;

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- d) adjusting the said thermostats in said households of said utility users and transmitting to said electric utility said data regarding said power usage and said harmonics; and
- e) sending an alert from said dataport to said utility if the differences between said calculated power use and that power measured by said utility meter exceed limits set by said utility. ~~a utility meter interface configured to communicate with a meter for measuring the utility usage in said household of a utility delivered to said household and~~
- ~~a network interface configured to communicate with digital service providers and a household interface configured to communicate with household devices of said utility user and~~
- ~~a computer disposed within said data port configured to store and process data and other communications from said interfaces and~~
- ~~said data port is located in a sealed housing with attendant means to detect any tampering of said sealed housing; and~~
- ~~said computer comprises a router configured to communicate with a multiplicity of digital service providers and with said interfaces located within said utility user's household and~~
- ~~said computer includes a scrambler to encrypt and decrypt communications between the utility user and in said digital services network, with the utility provider and vendors to which said user can connect.~~

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43) (Withdrawn previously submitted) A multifunction data port apparatus as cited in claim 42 with attendant electronics configured to use a global positioning system to identify the physical location of said multifunction dataport.

44) (Withdrawn previously submitted) A multifunction data port apparatus as cited in claim 42, wherein said computer further comprises a data storage device configured to retrieve, transmit, receive and store information and communication received from said interfaces and a battery to provide backup power in cases of power outage.

45) (Withdrawn currently amended) A method of conducting transactions optimized by a secure computing environment enabled by means of said multifunction data port apparatus as recited in claims 30 and 42, wherein said computer is further configured to receive an authorization for an Internet financial transaction from said vendor capable of using a credit and debit card number for the said utility user's in said household together with the name of an ~~Internet~~ said vendor; and wherein said data port is further configured for

- a. encrypting a data port number and Internet address;
- b. encrypting said card number of said utility user, prior to transmission of encrypted card number to said vendor ~~or creditor~~, with an encryption key known by the financial institution which issued said credit or debit card to said utility user;
- c. transmitting said encrypted card number and the amount of the purchase for financial authorization to a said financial institution which issued said credit or debit card;
- d. receiving from said financial institution verification that a purchase amount reported by said vendor is matched to the amount transmitted by said data port from said utility user by thence

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e. having said financial institution authorizeing payment to said vendor only when the two purchase amounts agree and said key decrypts the number from said vendor into a valid number for processing the transaction by said vendor and wherein said vendor never has possession of a valid credit or debit card number and whereby said encryption key is changed for each transaction.

46) (Withdrawn previously submitted) A multifunction data port apparatus of claim 43 further configured to insure that said dataport is physically located for use by said utility provider and said vendor in said utility user's household by means of the physical location provided by either a global positioning system via satellite, or via ground-based radio frequency triangularization methods, or both.

47) (Withdrawn previously submitted) A method of conducting a secure purchase or other secure transaction by means of using the multifunction dataport of claim 45 configured as a secure terminal accessing the Internet or other digital service network and further configured to

- a) provide that the authorized party sending said message to said secure data port asking it to transmit to said authorized party the current timing signals from said global positioning system and
- b) to provide that authorized party is using said timing signals to verify the location of said secure data port, and
- c) said timing signals and location providing said authorized party with an unique key to decrypt message.

48) (Withdrawn previously submitted) A method for conducting secure computing and transmission of data using the multifunction dataport in a sealed location of claim 45 by further means of

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- a) utility user transmitting and receiving data within said utility user's household from said sealed multifunction dataport and
- b) said secure dataport transmitting said secure message over a digital services network only if said seal is intact and if said data port does not detect evidence of tampering.

49) (Withdrawn previously submitted) A method for using the multifunction data port apparatus of claim 41 to control a switch located in the utility meter of said utility customer to remotely turn electric power on and off by means of

- a) electric utility installing utility meter with said switch to control peak demand power in utility user's meter box and
- b) said utility sending commands to said multifunction data port to transmit through said meter interface to said utility meter the signal to switch on and off the said electric power or any circuit within said utility user's household to which the utility user has by prior agreement consented.

50) (Withdrawn previously submitted) The method to communicate secure financial and other transactions including voting and census registration by the use of said secure dataport and the means of the steps stated in claim 45.

51) (Withdrawn previously submitted) The method of using the broadband multifunction dataport of claim 34 to receive from digital service networks video communication, games and multimedia for use by said utility user in said household.

52) (Withdrawn currently amended) The method of using the multifunction dataport of claims 1, 30, 36, and 37 and ~~35~~ to receive and transmit utility data including power use, peak demand pricing, power factor and Voltage harmonics as well as telecommunication data

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including voice over Internet protocol, cellular and local telephone services, video, and video on demand by said utility user.

53) (Withdrawn previously submitted) The multifunction dataport apparatus of claim 42 wherein said sealed housing provides the seal and means for attachment for the connection of the electric meter to the meter box.

54) (Withdrawn previously submitted) The multifunction dataport apparatus of claim 42 where said sealed housing of said data port is physically attached to the electric meter box

55) (Withdrawn previously submitted) The method to use the multifunction dataport apparatus of claim 30 as a secure terminal by locating it on power poles in the vicinity of the power distribution lines and the said utility user's household.

56) (Withdrawn previously submitted) A method to further configure and use the multifunction dataport apparatus of claim 45 as a secure terminal whereby

a) said data port is further configured to have a serial number and Internet address known to and registered with financial and other secure institutions and said vendors at the request of said utility user and

b) said serial number and Internet address is itself encrypted and is ~~contemplate~~ configured to generate the said unique key to encrypt and decrypt data transmission by said dataport.

57) (Withdrawn previously submitted) A method to use the multifunction dataport of claims ~~1~~, 30, 32, 36 and 37 and ~~32~~ to sub-meter electric power and provide computer services and access to the Internet and other digital services networks by the means of

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- a) said dataport being used as a master data port to the sub-metered data ports attached to the utility meter and housing of each of the said sub-metered data ports and
- b) providing electrical and other utility services to each utility user in residential and commercial structures wherein said utility services include cellular and other telecommunication services, Internet access, cable TV, video games and other access to said digital services networks through said sub-metered data ports.

58) (Withdrawn currently amended) A method according to claim 43 wherein the said multifunction data port and said sub-metered data ports are connected and configured to ~~employed to receive~~ transmissions that monitor the movements of users restricted to their said households ~~homes~~ or other quarters by legal action or other circumstances including medical disabilities.

59. (Currently amended) A multifunction data port with multiple interfaces connected between a digital services network, including the Internet, and a utility user's household, said data port comprising:

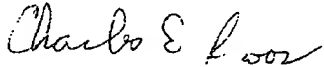
- a) a utility meter interface for measuring, recording, reporting, and messaging bi-directionally in said digital services network, peak demand, power factor, Voltage harmonics and utility usage in said household, of an electric utility delivered to said household, and said utility meter interface located in housing for said data port and electrically coupled to an electric meter.
- b) A computer disposed within said utility meter or data port housing and coupled or connected to said utility meter or data port housing and coupled or connected to said utility meter, said computer providing a household interface between said digital services

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network and said devices located internal to said utility user's household, and able to process said data and said information received at broadband rates in said communications digital services network for use in said internal devices



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